

**REMARKS**

This is a full and timely response to the outstanding non-final Office Action mailed March 19, 2004 (Paper No. 3). Upon entry of this response, claims 1-2, 4-7, 10, and 13-33 are pending in the application. In this response, claims 1, 14-21 have been amended, claims 3, 8-9 and 11-12 have been cancelled, and claims 25-33 have been added. Applicants respectfully request that the amendments being filed herewith be entered and request that there be reconsideration of all pending claims.

1. Allowable Subject Matter

Applicants appreciate the Examiner's allowance of claim 18. Applicants also acknowledge the Examiner's indication in the Office Action that claims 15-17, 20, 23, and 24 would be allowable if rewritten to include all of the limitations of the base claim and any intervening claims. However, Applicants have not amended dependent claims 15-17, 20, 23, and 24 to incorporate the limitations of their parent claims in this response, because Applicants believe, for the reasons detailed below, that the parent claims which dependent claims 15-17, 20, 23, and 24 depend upon are each allowable over the cited art.

2. Specifications Objection

The specification has been objected to as containing an informality. Specifically, the Office Action identifies that: "On page 8, line 16, the phrase 'constellation vector 27' is suggested to be changed to 'eq\_xeye 27'." The specification has been amended to correct this informality. Although this amendment effects a change to the specification, it is respectfully asserted that no new matter has been added.

3. Rejection of Claims 1-14, 19, 21, and 22 under 35 U.S.C. §103

Claims 1-14, 19, 21, and 22 have been rejected under §103(a) as allegedly obvious over *Koslov* (U.S. 5,471,508) in view of the knowledge of one of ordinary skill in the art. Applicants respectfully traverse these rejections. It is well established at law that, for a proper rejection of a claim under 35 U.S.C. §103 as being obvious based upon a combination of references, the cited combination of references must disclose, teach, or suggest, either implicitly, all elements/features/steps of the claim at issue. *See, e.g., In re Dow Chemical*, 5 U.S.P.Q.2d 1529, 1531 (Fed. Cir. 1988); *In re Keller*, 208 U.S.P.Q.2d 871, 881 (C.C.P.A. 1981).

a. Claims 1 and 21

Applicants respectfully submit that claims 1 and 21, as amended, are allowable for at least the reason that the proposed combination of *Koslov* in view of the knowledge of one of ordinary skill in the art does not disclose, teach, or suggest at least the feature of “a calculator configured to receive the received signal segment and the discrete data symbol and configured to derive a symbol timing phase error” as recited in amended claim 1, or the feature of “calculating a symbol timing phase error and average symbol timing phase error based upon the received signal segment and discrete data symbol” as recited in amended claim 21.

The Office Action alleges that the phase detector 230 and phase accumulator 250 correspond to the above-recited limitations. Applicants respectfully disagree. Phase detector 230 and phase accumulator 250 are part of *Koslov*’s carrier recovery circuit 200, and the phase errors used by these components relate to *carrier phase error* rather than symbol timing phase error as recited in amended claims 1 and 21. Symbol timing in *Koslov* is provided by timing recovery circuit 60, which provides an analog control signal to VCO 80. (Col. 8, lines 20-50.)

Applicants point out that although VCO 80 generates symbol timing for a receiver, it is not the oscillator recited in amended claims 1 and 21. Other limitations in claims 1 and 21 require that the oscillator receive a control signal based on an average symbol timing phase error. *Koslov* does not disclose no structure whatsoever for the timing recovery circuit 60 that produces the VCO 80 control signal. And, as discussed above, the phase accumulator 250 averages carrier phase error rather than symbol timing phase error.

Accordingly, the proposed combination of *Koslov* in view of the knowledge of one of ordinary skill in the art does not teach at least the claimed limitations of a “a calculator configured to receive the received signal segment and the discrete data symbol and configured to derive a symbol timing phase error” as recited in claims 1 and 21. Since the proposed combination of *Koslov* in view of the knowledge of one of ordinary skill in the art does not teach at least the above-described features recited in claims 1 and 21, a *prima facie* case establishing an obviousness rejection by *Koslov* in view of the knowledge of one of ordinary skill in the art has not been made. Thus, claims 1 and 21 are not obvious under the proposed combination of *Koslov* in view of the knowledge of one of ordinary skill in the art, and the rejection should be withdrawn.

b. Claim 2

Applicants respectfully submit that claim 2 is allowable for at least the reason that the proposed combination of *Koslov* in view of the knowledge of one of ordinary skill in the art does not disclose, teach, or suggest at least the feature of “the calculator comprising a multiplier and a leaky integrator” as recited in claim 2.

The Office Action asserts that the phase accumulator 250 of *Koslov* discloses the above-recited limitation. Applicants respectfully disagree, and assert that the phase accumulator 250 is

an ideal integrator with no leaky components. In contrast, Applicants' invention, as defined by claim 2, uses leaky integrator 41 with leaky components multiplier 50 and subtractor 43.

Accordingly, the proposed combination of *Koslov* in view of the knowledge of one of ordinary skill in the art does not teach at least the claimed limitation of a "a calculator configured to receive the received signal segment and the discrete data symbol and configured to derive a symbol timing phase error" as recited in claim 2. Since the proposed combination of *Koslov* in view of the knowledge of one of ordinary skill in the art does not teach at least the above-described features recited in claim 2, a *prima facie* case establishing an obviousness rejection by *Koslov* in view of the knowledge of one of ordinary skill in the art has not been made. Thus, claim 2 is not obvious under the proposed combination of *Koslov* in view of the knowledge of one of ordinary skill in the art, and the rejection should be withdrawn.

c. Claims 3-14, 19, and 22

Since claim 1 and 21 are allowable, Applicants respectfully submit that claims 3-14, 19, and 22 are allowable for at least the reason that each depends from an allowable claim. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q. 2d 1596, 1598 (Fed. Cir. 1988). Therefore, Applicants respectfully request that the rejection of claims 3-14, 19, and 22 be withdrawn.

4. Newly Added Claims

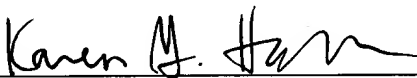
Applicants submit that no new matter has been added in the new claims 25-33 and that new claims 25-33 are allowable over the cited prior art. Therefore, Applicants request that the Examiner enter and allow the above new claims.

**CONCLUSION**

Applicants respectfully request that all outstanding objections and rejections be withdrawn and that this application and presently pending claims 1-2, 4-7, 10, and 13-33 be allowed to issue. If the Examiner has any questions or comments regarding Applicants' response, the Examiner is encouraged to telephone Applicants' undersigned counsel.

Respectfully submitted,

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